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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RYOSAKU INAMURA, KAZUMASA SHIMODA, TOSHIO  
SUGIMOTO, and TAKUYA UZUMAKI

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Appeal 2008-3640  
Application 10/718,202  
Technology Center 2600

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Decided: December 11, 2008

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Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and CARLA M.  
KRIVAK, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Final Rejection of  
claims 1-4, which are all of the claims pending in this application. Claims 5-

10 have been canceled. An oral hearing on this appeal was conducted on November 18, 2008. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Appellants' invention relates to a perpendicular magnetic recording medium which includes a perpendicular magnetic recording layer and a backing layer which backs the perpendicular magnetic recording layer. The backing layer has a magnetization in the in-plane direction and is formed of a ferrimagnetic material having a compensation temperature in the vicinity of a recording/reproducing temperature used for reproducing magnetic information from the perpendicular magnetic recording layer (Spec. 3:33-4:17).

Claim 1 is illustrative of the invention and reads as follows:

1. A perpendicular magnetic recording medium comprising at least a perpendicular magnetic recording layer and a backing layer backing said perpendicular magnetic recording layer, said backing layer having an in-plane magnetization,

characterized in that said backing layer is formed of a ferrimagnetic material having a compensation temperature in the vicinity of a recording/reproducing temperature in which reproducing of magnetic information is made from said perpendicular magnetic recording layer,

wherein said ferrimagnetic backing layer has an easy axis in an in-plane direction.

The Examiner relies on the following prior art references to show unpatentability:

Akiyama

US 5,815,342

Sep. 29, 1998

Claims 1-4, all of the appealed claims, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Akiyama in view of Fukuichi.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs and Answer for the respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived [see 37 C.F.R. § 41.37(c)(1)(vii)].

#### ISSUE

Under 35 U.S.C. § 103(a), with respect to appealed claims 1-4, would one of ordinary skill in the art at the time of the invention have found it obvious to combine Akiyama and Fukuichi to render the claimed invention unpatentable? The pivotal issue before us is whether an ordinarily skilled artisan would have looked to the perpendicularly magnetized ferrimagnetic backing layer teachings of Fukuichi to choose a particular material with the proper temperature compensation characteristic for the ferrimagnetic backing layer of Akiyama which is magnetized in the in-plane direction.

#### FINDINGS OF FACT

The relevant facts include the following:

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<sup>1</sup> A copy of an English translation of this document provided by the USPTO on July 2002 is enclosed with this decision.

1. Akiyama discloses (Figure 2, col. 3, ll. 53-64, and col. 7, ll. 46-59) a perpendicular recording medium 20 including a perpendicular magnetic recording layer 23 and a ferrimagnetic backing layer 22 magnetized in the in-plane direction. Akiyama's disclosure is silent about the temperature compensation characteristics of the particular materials chosen for the ferrimagnetic backing layer.
2. Fukuichi discloses (Figures 1 and 2) a high density recording medium including a magnetic recording layer 3 magnetized in the perpendicular vertical direction with respect to the base substrate 1.
3. Fukuichi further discloses a ferrimagnetic backing layer 2 with a compensation temperature within the range of the magnetic recording and reproducing temperature. An example of the particular material used for the ferrimagnetic backing layer is GdFeCo. (Fukuichi, English translation, page 3, lines 18-28, and page 7, line 7).
4. Fukuichi also discloses (English translation, page 4, lines 11-19 and page 6, lines 26-31) that the ferrimagnetic backing layer 2 is magnetized in the vertical perpendicular direction with respect to the base substrate 1.

#### PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (Fed. Cir. 1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other

ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore,

there must be “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007)(quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

### ANALYSIS

With respect to the Examiner’s 35 U.S.C. § 103(a) rejection of appealed independent claim 1 based on the combination of Akiyama and Fukuichi, Appellants assert (App. Br. 9-14; Reply Br. 3-8) that the Examiner has failed to set forth a *prima facie* case of obviousness since a proper basis for the proposed combination of references has not been established. After reviewing the arguments of record from Appellants and the Examiner, we are in general agreement with Appellants’ position as stated in the Briefs.

The Examiner proposes to modify the perpendicular magnetic recording medium structure disclosed by Akiyama by substituting the ferrimagnetic backing layer 2 of Fukuichi for the backing layer 22 of Akiyama. According to the Examiner, the compensation temperature characteristic of the material, e.g., GdFeCo, used for the ferrimagnetic backing layer 2 in Fukuichi, would satisfy the ferrimagnetic backing layer requirements of appealed claim 1.

As argued by Appellant (App. Br. 10-11; Reply Br. 4-5), however, the high density recording features of Fukuichi are achieved by providing the

magnetization of both the magnetic recording layer 3 and the ferrimagnetic backing layer 2 in the vertical direction with respect to the substrate 1 (Finding of Fact 4). In contrast, the high density recording features of the Akiyama device are achieved by establishing the magnetization of the recording layer 23 in the perpendicular direction while the magnetization of the ferrimagnetic layer 22 is in the in-plane direction. We agree with Appellants (*id.*) that the ordinarily skilled artisan, seeking to select a material with the requisite temperature compensating characteristic for the in-plane ferromagnetic backing layer 22 in Akiyama, would not be led to the teachings of Fukuichi which achieves high density recording with both the magnetic recording layer 3 and the ferrimagnetic backing layer magnetized in the perpendicular vertical direction.

In other words, any possible suggestion to use the particular ferrimagnetic backing layer material disclosed by Fukuichi in the device of Akiyama would have to ignore the fact that Fukuichi discloses high density recording features are achieved by magnetizing the ferrimagnetic backing layer in the perpendicular vertical direction. This is in contrast to the high density recording result achieved in Akiyama, as well as in the claimed device of Appellants, by magnetizing the ferrimagnetic backing layer in the in-plane direction.

We do note that it is proper for an Examiner to consider, not only the specific teachings of a reference, but inferences a skilled artisan might draw from them. It is equally important, however, that the teachings of prior art references be considered in their entirety. *See W.L.Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548 (Fed. Cir. 1983). In particular, in order for us to accept the Examiner's conclusions in the present factual

situation, we would have to improperly selectively ignore significant portions of the disclosure of the Fukuichi reference. In our view, given the disparity of problems addressed by the applied Akiyama and Fukuichi prior art references, and the differing solutions proposed by them, any attempt to combine them could only come from a hindsight reading of Appellants' own disclosure.

In view of the above discussion, we are of the opinion that the applied prior art references, even if combined, do not support the obviousness rejection. We, therefore, do not sustain the Examiner's 35 U.S.C. § 103(a) rejection of independent claim 1, nor of claims 2-4 dependent thereon.

#### CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that Appellants have shown the Examiner erred in rejecting claims 1-4 for obviousness under 35 U.S.C. § 103(a).

#### DECISION

The Examiner's 35 U.S.C. § 103(a) rejection of claims 1-4, all of the appealed claims, is reversed.



Appeal 2008-3640  
Application 10/718,202

REVERSED

gvw

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